AMENDMENTS TO THE CLAIMS:

Please amend the claims as follows. This listing of claims will replace all prior versions, and listings of claims in the application:

1-45. (Cancelled)

46. (New) A method of processing a plurality of source images to provide a composite image suitable for rendering as a rendered composite image, comprising the steps of:

receiving the plurality of source images;

encoding the plurality of source images to thereby provide the composite image;

wherein the encoding includes mapping of source image values at pixel locations in the source images to colorant control values at respective pixel locations in a spectrally-multiplexed image plane, wherein the colorant control values specify an amount of each one of a plurality of *M* colorants to be deposited at corresponding locations in the rendered composite image;

wherein the mapping of the pixel values from the plurality of source images is determined according to a plurality of spatial luminance distributions each of which representing the desired response of the rendered composite image to illumination thereof by a respective one of a plurality of *N* narrow band illuminants;

wherein the mapping of the pixel values from the plurality of source images is calculated to cause a selected one of the source images to be recovered when the rendered composite image is subject to illumination by at least a selected one of the *N* narrow band illuminants; and

wherein the encoding includes illuminant-neutral gray component replacement (GCR) that employs determination of the common density of the colorants used in rendering the composite image when the rendered composite image is subjected to one or more of the N narrow band illuminants, and wherein the neutrality of the replacement colorant is illuminant dependant, whereby the replacement colorant is non-neutral under white light and neutral under the selected one of the *N* narrow band illuminants.

47. (New) The method of **claim 46**, wherein a fractional GCR component (frac) in the illuminant-neutral gray component replacement GCR is spatially modulated.

48. (New) The method of **claim 47**, wherein the fractional GCR component (frac) includes an imagewise spatial dependence determined according to a predetermined source image.

49. (New) The method of **claim 46**, wherein multiple non-neutral replacement colorants are employed for density replacement.

50. (New) The method of **claim 46**, wherein a combination of neutral and non-neutral colorants is employed for density replacement.

51. (New) The method of **claim 46**, wherein the mapping of pixel values further comprises adjusting the colorant control values to compensate for unwanted absorption of at least one of the *N* narrow band illuminants by at least one of the *M* colorants.

52. (New) The method of **claim 51**, wherein at least one of the colorants is selected from the group consisting of cyan, magenta, yellow, and black colorants, and at least one of the narrow band illuminants is selected from the group consisting of red, green, and blue narrow band illuminants.

53. (New) The method of **claim 46**, wherein the mapping of pixel values further comprises adjusting the colorant control values to produce first and second spatial luminance distributions when the rendered composite image is subjected to respective first and second narrow band illuminants, the first spatial luminance distribution having a constant density, and the second spatial luminance distribution having a spatially-varying density.

54. (New) The method of **claim 46**, wherein the mapping of pixel values further comprises a gamut mapping step to limit the mapping to a predetermined system gamut according to a determination of realizable luminance values.

55. (New) The method of **claim 46**, further comprising the step of rendering the composite image to produce the rendered composite image on a substrate.

56. (New) The method of **claim 55**, wherein the rendering is performed by a hardcopy reprographic device selected from the group consisting of: inkjet, dye sublimation, electrophotographic, xerographic, photographic, lithographic, offset, letterpress, and gravure printing apparatus.

57. (New) An article of manufacture, comprising a substrate having rendered thereon a rendered composite image, produced according to the method of **claim 55**.

58. (New) An imaging system for receiving image data representative of plural source images and for processing the image data to thereby provide a composite image in a form suitable for rendering as a rendered composite image, comprising:

an image processing unit for receiving the plurality of source images and for encoding the plurality of source images to thereby provide the composite image;

wherein the encoding includes mapping of source image values at pixel locations in the source images to colorant control values at respective pixel locations in a spectrally-multiplexed image plane, wherein the colorant control values specify an amount of each one of a plurality of *M* colorants to be deposited at corresponding locations in the rendered composite image;

wherein the mapping of the pixel values from the plurality of source images is determined according to a plurality of spatial luminance distributions each of which representing the desired response of the rendered composite image to illumination thereof by a respective one of a plurality of *N* narrow band illuminants;

wherein the mapping of the pixel values from the plurality of source images is calculated to cause a selected one of the source images to be recovered when the rendered composite image is subject to illumination by at least a selected one of the *N* narrow band illuminants; and

wherein the encoding includes illuminant-neutral gray component replacement (GCR) that employs determination of the common density of the colorants used in rendering the composite image when the rendered composite image is subjected to one or more of the N narrow band illuminants, and wherein the neutrality of the replacement colorant is illuminant dependant, whereby the replacement colorant is non-neutral under white light and neutral under the selected one of the *N* narrow band illuminants; and

an interface for providing the composite image.

59. (New) The system of **claim 58**, wherein a fractional GCR component (frac) in the illuminant-neutral gray component replacement GCR is spatially modulated.

60. (New) The system of **claim 59**, wherein the fractional GCR component (frac) includes an imagewise spatial dependence determined according to a predetermined source image.

61. (New) The system of **claim 58**, wherein multiple non-neutral replacement colorants are employed for density replacement.

62. (New) The system of **claim 58**, wherein a combination of neutral and non-neutral colorants is employed for density replacement.

63. (New) The system of **claim 58**, wherein the mapping of pixel values further comprises adjusting the colorant control values to compensate for unwanted absorption of at least one of the *N* narrow band illuminants by at least one of the *M* colorants.

64. (New) The system of **claim 63**, wherein at least one of the colorants is selected from the group consisting of cyan, magenta, yellow, and black colorants, and at least one of the narrow band illuminants is selected from the group consisting of red, green, and blue narrow band illuminants.

65. (New) The system of **claim 58**, wherein the mapping of pixel values further comprises adjusting the colorant control values to produce first and second spatial luminance distributions when the rendered composite image is subjected to respective first and second narrow band illuminants, the first spatial luminance distribution having a constant density, and the second spatial luminance distribution having a spatially-varying density.

66. (New) The system of **claim 58**, wherein the mapping of pixel values further comprises gamut mapping to limit the mapping to a predetermined system gamut according to a determination of realizable luminance values.

67. (New) The imaging system of **claim 58**, further comprising an image rendering device for receiving the composite image and for rendering the composite image on a substrate to provide the rendered composite image.

68. (New) The imaging system of **claim 67**, further comprising a demultiplexer for subjecting the rendered composite image to illumination by the selected one of the *N* narrow band illuminants.

69. (New) A computer program embodied on a computer readable medium, the program being executable for receiving image data representative of plural source images and for processing the image data to thereby provide a composite image suitable for rendering as a rendered composite image, comprising the steps of:

receiving the plurality of source images;

encoding the plurality of source images to thereby provide the composite image;

wherein the encoding includes mapping of source image values at pixel locations in the source images to colorant control values at respective pixel locations in a spectrally-multiplexed image plane, wherein the colorant control values specify an amount of each one of a plurality of *M* colorants to be deposited at corresponding locations in the rendered composite image;

wherein the mapping of the pixel values from the plurality of source images is determined according to a plurality of spatial luminance distributions each of which representing the desired response of the rendered composite image to illumination thereof by a respective one of a plurality of *N* narrow band illuminants;

wherein the mapping of the pixel values from the plurality of source images is calculated to cause a selected one of the source images to be recovered when the rendered composite image is subject to illumination by at least a selected one of the *N* narrow band illuminants; and

wherein the encoding includes illuminant-neutral gray component replacement (GCR) that employs determination of the common density of the colorants used in rendering the composite image when the rendered composite image is subjected to one or more of the N narrow band illuminants, and wherein the neutrality of the replacement colorant is illuminant dependant, whereby the replacement colorant is non-neutral under white light and neutral under the selected one of the *N* narrow band illuminants.

70. (New) The program of **claim 69**, wherein a fractional GCR component (frac) in the illuminant-neutral gray component replacement GCR is spatially modulated.

71. (New) The program of **claim 70**, wherein the fractional GCR component (frac) includes an imagewise spatial dependence determined according to a predetermined source image.

72. (New) The program of **claim 69**, wherein multiple non-neutral replacement colorants are employed for density replacement.

73. (New) The program of **claim 69**, wherein a combination of neutral and non-neutral colorants is employed for density replacement.

74. (New) The program of **claim 69**, wherein the mapping of pixel values further comprises adjusting the colorant control values to compensate for unwanted absorption of at least one of the *N* narrow band illuminants by at least one of the *M* colorants.

75. (New) The program of **claim 74**, wherein at least one of the *M* colorants is selected from the group consisting of cyan, magenta, yellow, and black colorants, and at least one of the *N* narrow band illuminants is selected from the group consisting of red, green, and blue narrow band illuminants.

76. (New) The program of **claim 69**, wherein the mapping of pixel values further comprises adjusting the colorant control values to produce first and second spatial luminance distributions when the rendered composite image is subjected to respective first and second narrow band illuminants, the first spatial luminance distribution having a constant density, and the second spatial luminance distribution having a spatially-varying density.

77. (New) The program of **claim 69**, wherein the mapping of pixel values further comprises a gamut mapping step to limit the mapping to a predetermined system gamut according to a determination of realizable luminance values.

78. (New) The program of **claim 69**, further comprising the step of initiating transmission of the composite image to an image rendering device suitable for rendering the composite image on a substrate.

79. (New) The program of **claim 69**, further comprising the step of controlling transmission of illuminant source control signals to a demultiplexer operable for subjecting the rendered composite image to illumination by the selected one of the *N* narrow band illuminants.